

# Exhibit 40

# Express Route to Learning Fashioned for Precocious

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**BALTIMORE** — In the fall of 1969, Johns Hopkins University admitted a 13-year-old prodigy to its freshman class.

Extraordinarily gifted in mathematics and science, he had shown after finishing eighth grade that he was ready for college. He did and his success made a strong impression on some psychologists at the university.

The result of their thinking is an unusual program designed to do systematically and on a broad scale smilething that is often left to chance in American education: Discover precocious children and speed up their learning.

Now, some 60 junior high school students in the Baltimore area are taking advanced math and science courses under that program. Some have already earned college credits. Most are expected to enter college early, a few probably next fall.

## Second Program Starts

The program started less than a year ago and is limited to students brilliant in quantitative areas: A second program, just starting, focuses on verbal and humanistic talent.

The Johns Hopkins effort coincides with a revival of interest nationally, after a period of relative inattention, in helping gifted children. The psychologists here plan to expand their search for precocity statewide and to devise model system that can be used anywhere.

Besides the systematic mass-screening approach, the psychologists cite these as aspects of their program as distinctive:

¶It concentrates on specific areas of talent and ability, not just general intelligence.

¶By using college level tests in the screening, it determines a child's maximum achievement and potential, not just that he is bright for his age group.

¶It provides for active intervention in the student's career, not just observation and description of his progress. Each child has an individual program, devised consultation with him and, his family, to speed his education at a pace that he can handle.

¶Intensive testing and interviewing make it possible to take into account not just ability but also personality and maturity.

### **Assumption Borne Out**

The assumption underlying the effort has been borne out by the results so far. It is that a tiny but significant number of children — perhaps one in 200 — are extraordinarily bright, able to, do work far beyond their grade level, at least in certain subjects.

One such student is Joseph Bates, the boy whose admission to Johns Hopkins helped to get the acceleration program started.

Joseph was 17 years old last October. This spring, he will graduate from Johns Hopkins with a bachelor's degree in quantitative studies and a master's in computer science.

Extremely articulate but soft-spoken and diffident, he describes himself as "a pretty, passive person." In junior high, he says, he was "reasonably bored, but content to go along."

With help from a sympathetic teacher, he took several advanced math courses on his own time. His brilliant performance was eventually called to the attention of Julian C. Stanley, a professor of psychology at Johns Hopkins.

"We were stunned," Dr. Stanley recalls. "Joseph tested far above the average college freshman in many areas and in some above graduate students. Yet we were worried about what to do, because he obviously wasn't getting much out of school."

After conferences with Joseph and his parents, and inquiries that determined the lack of opportunity for him in area high schools, it was decided that the boy should go at once from eighth-grader to college freshman.

Joseph says that the academic and social adjustment was easy, and those who have watched his progress agree.

An argument, made by Dr. Stanley, who heads the Hopkins program for math-science prodigies, and others involved with gifted students is that while some may find rapid acceleration intolerable psychologically, others can be seriously hurt personally and intellectually if they are held back.

Express Route to Learning Fashioned for Precocious Second Graders

Jonathan Edwards, for example, was unhappy to the point of misery in junior high school. He was bored and complained about his inability to find intellectual stimulation. He was unpopular with fellow students and some teachers.

Jonathan talks of the period in a matter-of-fact manner:

"In the eighth grade, I really dropped off. I'm pretty sure I would have lost all interest in academics and turned to other things. I don't know what it's so long ago. Four years of change at this age is a lot."

### **Acted With Reluctance**

Jonathan is 16 now and a junior at Johns Hopkins and is making excellent grades with a double major in math and philosophy. His family had heard of Joseph Bates's early admission and got in touch with the university.

Dr. Stanley recalls that the decision to admit Jonathan was made with great reluctance because of the boy's seeming maladjustment.

"His mother knew I was wrong," the psychologist says. "Jonathan was realistically unhappy, and when he came here the 'maladjustment' disappeared completely."

Jonathan says that he became "instantly more mature."

A third "radical accelerate," Jeffrey Rottman, 16, was admitted to Johns Hopkins last fall after the 10th grade. He has maintained an A average with a 17-credit load of difficult courses.

The Johns Hopkins search for precocious children is financed by a five-year grant of \$266,000 from the Spencer Foundation of Chicago. It got under way last spring with the testing of 450 youngsters under 14 in the seventh, eighth and ninth grades in the Baltimore area.

### **Younger Children Enrolled**

The children took collegeentrance-level tests in mathematics or science or both in conjunction with the greater Baltimore science fair. (The science testing has been dropped from the program this year because it is considered an inefficient screening method).

Many of the competitors scored well enough to receive counseling on some form of, school acceleration. The top 35 boys and eight girls were chosen for further intensive testing in both verbal and quantitative skills, personality and attitudes before moving into the formal program run by the Johns Hopkins team.

About 20 even younger children, culled from almost 400, bright sixth-graders found in a separate survey last spring, were enrolled in a Saturday morning class at Johns Hopkins. Most will have completed Algebra and II, trigonometry and plane geometry by the end of this semester.

One special student in the Saturday morning group is David Hollander, who is in the fourth grade and will be 10 years old in April. He is doing well with high school math.

He likes most of his regular school subjects, David said after class recently. He also likes to play second base and shortstop and might some day like to be a teacher but isn't sure because he does not know yet what physics and trigonometry are.

### **Cultural Attitudes**

Express Route to Learning Fashioned for Precocious. The New York Times  
The families of the children in the Johns Hopkins programs are more or less uniformly middle class, Dr. Stanley says, with a bias toward academic and professional occupations. No blacks have qualified through the mass testing so far, though two have been found outside that process.

Sharp differences between the sexes in test performance have emerged. Although 44 per cent of those taking the initial exams last year were girls, no girl scored above 600 (out of a maximum 800) on the math test. Forty-three boys exceeded that level.

Other studies have suggested that culturally imposed attitudes are the cause of a feminine lag in math and science. The Johns Hopkins program's staff plans to study the question.

Last month, the second year of the junior high school program began with the testing of 667 students, chiefly from Maryland's five biggest counties. The plan is to make the screening statewide next year.

Also tested last month were about 300 seventh and eighth-grade children from whom will be-chosen the first participants in the new program stressing verbal and humanistic talent — a quality more difficult to measure, and probably more a function of age, than quantitative ability.

That program, headed by Robert Hogan, an associate professor of psychology, is also financed by the Spencer Foundation with a grant for five years of \$189,000.

A certain evangelistic flavor emerges in interviews with the Johns Hopkins people involved in the programs for the precocious. They feel — and a recent study by the Office of Education supports the view — that an altogether proper concern for the retarded and the disadvantaged has led to neglect of the gifted.

Now, after a year of working with the youngsters who excel at math and science, the psychologists are finding increasing flexibility about acceleration in schools around Baltimore. Their hope is to develop principles and practices that will spread to schools around the country.